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Classification

Note: In this classification topics which are too general for a subclass, or are specific but not provided for, are entered in the main class. Thus, a paper on general textile testing belongs in IX, 1 and so does one on testing plastics since it has no specific subclass. A paper on general textile testing and analysis belongs in IX and so does one on testing and analysis of plastics. A paper on two or more kinds of proofing belongs in VIII; so does one on runproofing hosiery. Subclasses for "miscellaneous" abstracts are thus eliminated.

I. Organic Fibers (physics, chemistry, manufacture).

1. Vegetable.
2. Animal.
3. Artificial (derived from natural products).
   a. Cellulosic rayons.
   b. Protein fibers.
4. Synthetic (made from synthetic high polymers).
   a. Nylon type (polyamides, polyesters, etc.).
   b. Vinyl and vinylidene polymers and copolymers.
   c. Condensation resin fibers.
5. Applications as fibers (not in yarns or fabrics).
   a. Insulation (heat, sound or electric).
   b. Plastic filler.
   c. Coated or impregnated products.

II. Inorganic Fibers (physics, chemistry, manufacture).

1. Natural.
2. Artificial.
3. Applications as fibers (not in yarns or fabrics).
   a. Insulation (heat, sound or electric).
   b. Plastic filler.
   c. Coated or impregnated products.

III. Nonfibrous Materials (general references and nontextile uses).

1. Plastics, resins, rubber.
   a. Cellulose derivatives.
   b. Polymer resins; natural resins.
   c. Condensation polymer resins.
   d. Rubbers and rubber derivatives.
2. Adhesives; gums; starches.
3. Surface active compounds; textile assistants.

IV. Fiber to Yarn (processes and machinery).

1. Preparation for spinning.
2. Spinning, doubling, twisting, winding.
   a. Cotton; vegetable fibers.
   b. Wool; worsted.
   c. Silk.
   d. Rayon.
   e. Winding.
3. Processing and finishing.
4. Products (thread, yarn, cord, etc.).
5. Applications as yarn (not in fabrics).
   a. Coated or impregnated products.
   b. Laminates.

V. Yarn to Fabric (processes and machinery).

1. Preparation.
2. Sizing.
3. Weaving.
   a. Looms.
   b. Loom parts.
   c. Control devices; stop motions; bobbin selectors.
   d. Processes.
   e. Defects.
4. Knitting.
5. Pile fabrics, laces, embroideries, netting.
6. Mechanical processing.
7. Products; design; construction.
8. Applications: nontextile uses of fabrics.
   a. Insulation (heat, sound or electric).
   b. Coated or impregnated products.
   c. Laminates.

VI. Finishing (processes, materials and equipment).

1. Preparation.
   a. Boiling and scouring.
   b. Degumming.
   c. Washing.
   d. Drying and conditioning.
2. Weighting.
3. Milling and fulling.
4. Carbonizing.
5. Mercerizing.
6. Sizing and finishing.

VII. Color (processes, materials and equipment).

1. Bleaching.
2. Dyeing.
   a. Direct.
   b. Developed dyeing.
   c. Vat.
   d. Printing.
3. Defects and dye failure; causes and prevention.
4. Pigment coloring.

VIII. Proofing (processes, materials and equipment).

1. Waterproofing; weatherproofing; moistureproofing.
2. Insectproofing.
3. Proofing against microbiological attack.
4. Flameproofing.
5. Creaseproofing.
6. Shrinkproofing.
7. Proofing against chemicals, solvents, perspiration, etc.

IX. Testing and Analysis (methods, apparatus and reagents); Specifications.

1. Physical and mechanical.
   a. Fibers.
   b. Yarns.
   c. Fabrics; foils; films.
   d. Textile chemicals and dyes.
2. Chemical.
   a. Fibers.
   b. Yarns.
   c. Fabrics; foils; films.
   d. Textile chemicals and dyes.
3. Biological.

X. Waste Recovery and Utilization; Waste Prevention.

1. Fiber wastes.
2. Yarn and fabric wastes.
3. Mill effluents and waste disposal; stream pollution.
4. Prevention of losses and spoilage.

XI. Cleansing.

1. Laundering.
2. Dry cleaning.

XII. Hazards; Safety Precautions.

1. Fire.
2. Accidents.
3. Occupational poisoning and diseases.
4. Deterioration (corrosion and decay).

XIII. Textile Mills.

1. Buildings (design and construction).
2. Machinery (general articles; maintenance; layout, etc.).
3. Power.
   a. Steam.
   b. Electric.
   c. Diesel and other engines.
   d. Power transmission.
4. Materials, handling and transport.
5. Lighting.
6. Atmospheric control (heating, ventilating, air conditioning, humidification).
7. Process control; control instruments.
8. Water supply.

XIV. Textile Research.

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Introduction to Volume 2

Beginning with Number 1 of Volume 2 several changes are inaugurated in "Textile Technology Digest."

1. **Circulation Policy.** Copies of Volume 1, Nos. 1 to 7 (June to December, 1944) were distributed without charge. Beginning with Volume 2 circulation is in three categories:

(a) **Subscriptions:** Per year (whole calendar years only), $15.00. The Institute of Textile Technology may find it advisable to limit circulation but paid subscriptions will be accepted so long as such limitations are not exceeded.

(b) **Exchanges:** By arrangement.

(c) **Free copies:** To members, staff and students.

2. **Classification.** The new classification of subject matter is printed as a separate sheet with this issue for convenient reference. Comments and suggestions from readers will be welcomed. The purpose is to classify logically and in sufficient detail to facilitate locating abstracts, but not in excessive detail.

3. **Arrangement.** Under individual class entries the abstracts are arranged according to sources. There are 3 groups, in the order:

(a) Abstracts from periodicals, alphabetically by the assigned short titles.

(b) Abstracts of patents, numerically under each nation (U. S. patents first, then other nations in alphabetical order).

(c) Book and pamphlet notices, alphabetically by authors.

4. **Style.** Columns are now numbered instead of pages, and the numbers will run consecutively through the volume.

Periodical references include the full publication date instead of the year alone.

5. **Literature Coverage.** The list of periodicals reviewed was printed in the December issue (Vol. 1, No. 7). It will be brought up to date at intervals.

6. **Patent Abstracts.** For the present, patent abstracts are taken from these sources:

(a) **United States:** *Official Gazette* of the U. S. Patent Office, or printed specifications of patents in Patent Office subclasses received by subscription. Class subscription copies are mailed as promptly as the *Official Gazette* whereas patents ordered by letter may be delayed two months or more.

(b) **British:** *Textile Manufacturer.* (The British Patent Office suspended its *Illustrated Official Abridgments* in September, 1939 "until further notice" but the abridgments will be used when they become available.) The present source provides adequate abstracts but no dates of abstracted patents.

(c) **Canadian:** *Canadian Patent Office Record.*

7. **Index.** An alphabetical author index will be issued after closing the volume. The classified arrangement is intended to serve instead of a subject index.

ABSTRACTS

I. ORGANIC FIBERS

FIBERS. J. Willcock and H. Kennedy. *Fibres, Fabrics & Cordage 11,* 376, 378-9, 381, 423-4 (Oct., Nov. 1944). The newer artificial and synthetic fibers are briefly reviewed in comparison with the older natural fibers. In addition to artificial substitutes for natural fibers, such as rayon in imitation of silk, linen and wool, it is suggested that future developments may include commercial use of natural fibers from sources not hitherto utilized.

BRIEF STUDY OF TEXTILE FIBERS AND THEIR PHYSICAL AND CHEMICAL PROPERTIES. William S. Huber, Rhode Island School of Design, Providence, R. I. 1944; 73 p.

Reviewed in *Can. Textile J. 61,* No. 23, 8-9 (Nov. 17, 1944).

I, 1. Vegetable

BOWSTRING FIBERS. A. C. Whitford, S. Stroock and Co. *Textile Age 8,* No. 11, 68, 70, 74, 76, 78 (Nov. 1944). The bowstring fibers of the Sansevieria family are described. They include Guinea bowstring, bowstring hemp, bowstring, ife hemp, kirk bowstring and Ehrenberg's bowstring. These fibers are used for rope, cordage and fish lines and are grown in Asia, Africa and parts of South America.

JUTE. C. R. Nodder, Indian Central Jute Committee. *Jute & Canvas Review 16,* No. 194, 5, 12 (Nov. 1944). If jute fabrics were woven from ply yarns with a moderate doubling twist or from fine single yarns with a moderate single twist and if fast dyes were employed, high grade jute could enter so many uses that it would almost rank as a new material. Either cotton or rayon can be plied with jute yarns for use either in warp or filler, thus greatly extending the range of possible uses. Plying jute yarns with cotton yarns increases durability and curtains of this material have been known to last under sunlight exposure for 6 or 7 years.

VARIATION OF FIBER LENGTH IN A BULK SAMPLE OF COTTON AND IN A SINGLE SEED. Technological Leaflet 6, Technological Laboratory, Indian Central Cotton Committee, 1944.

Reviewed in *Textile Mfr. 70,* 426 (Oct. 1944).

I, 2. Animal

NONFELTING WOOL. J. B. Speakman and T. Barr (to Imperial Chem. Industries, Ltd.). Brit. P. 559 787. Wool is treated (to increase stiffness, decrease moisture absorption and lessen its felting and shrinking tendencies) by steaming below 100°C. in presence of a vapor (styrene or a vinyl or methacrylic ester) which polymerizes in the fabric.

I, 3. Artificial

NEW FIBERS. Anon. *Textile Mfr. 70,* 402-3 (Sept. 1944). A brief, illustrated review of the manufacture, properties and uses of Aralac, soybean protein fiber and vinyl resin fibers.

I, 3a. Cellulosic rayons

RAYON STAPLE. H. Ashton, Courtaulds Ltd. *Textile Weekly 34,* 559, 561-2, 610, 612 (Oct. 6 and 13, 1944). The optimum staple length of rayon staple for high yarn strength is believed to be about 2½" within a reasonable range of deniers, but cotton machinery is not easily adaptable to staple lengths over 2⅛". Improved machines are needed to take full advantage of this and other features of rayon staple.

SEWING THREAD. Donald Finlayson (to Celanese Corp. of America). USP 2 364 135, Dec. 5. Strong sewing thread is made of stretched and hydrolyzed acetate rayon filaments in a balanced assembly of components treated with a lubricant dressing.

VISCOSE. Norman L. Cox (to E. I. du Pont de Nemours & Co.). USP 2 364 273, Dec. 5. Spinning filaments under high tension in a spinning bath of H_2SO_4 containing 1-10% $FeSO_4$ and 0.1-1% $ZnSO_4$.

VISCOSE. Isaac F. Walker (to E. I. du Pont de Nemours & Co.). USP 2 364 407, Dec. 5. A bath into which viscose filaments are spun in yarn manufacture is periodically withdrawn, treated to precipitate a heavy metal salt which would otherwise accumulate on the spinneret, and returned to the system.

CELLULOSE ETHER FILAMENTS. H. Dreyfus. Brit. P. 559 754. An aqueous solution of an alkali-soluble cellulose ether is extruded into a coagulating bath containing an organic acid and salt, e. g. acetic acid and sodium acetate.

STAPLE FIBER CUTTER. Am. Viscose Corp. Brit. P. 559 995 and 560 018. A staple fiber cutter is adapted to cut continuous filaments into varying lengths of staple fiber by varying the distance between the feed and the cutter during operation of the machine; or the variations are effected by varying the rate of feed.

DELUSTERING RAYON. Brit. Celanese, Ltd. Brit. P. 560 375. Permanent delustering of acetate rayon is effected with a polymer of ethylene oxide in a hot aqueous medium. The polymer is a solid (m. p. about 50°C.) with a molecular weight of about 4000.

SPINNING RAYON. Am. Viscose Corp. Brit. P. 560 616. An improved device for coupling a rayon spin box to a drive spindle in such a way that the box can be easily removed and replaced while the spindle is rotating at high speed.

RAYON. Sverre Gulbrandsen, Neo S. Serinis and Geo. T. Trant (to Budd Internat'l Corp. to Edw. G. Budd Mfg. Co. to Industrial Rayon Corp.). Can. P. 424 237, Dec. 5. A cuprammonium cellulose solution for making rayon is prepared at about 0°C. from aqueous NH_4OH, copper hydroxide and cellulose; the NH_3:cellulose ratio is well below 1 and is maintained so until and during the filament spinning operation.

I, 3b. Protein fibers

PROTEIN FIBER. Textile Bull. 67, No. 8, 52-3 (Dec. 15, 1944). News note concerning Ardil, a new British wool-like fiber made from peanut protein. The fiber resembles wool in dyeing behavior, moisture absorption and rate of wetting. It is shrinkproof, mothproof and only about half as expensive as wool.

SILK DERIVATIVES. Anon. *Silk & Rayon 18,* 873, 875-6, 985-6, 988, 1236-7 (Aug., Sept., Nov. 1944). The OH groups in silk can be esterified with acetic acid or etherified with diazomethane or diethyl sulfate, in order to increase the chemical stability and otherwise modify the properties of silk. Methods of esterification and methylation are described.

TANTALUM RAYON EQUIPMENT. C. C. Downie. *Silk & Rayon 18,* 1108-9, 1117 (Oct. 1944). Methods of fabricating tantalum into spinneret cups and jets, nozzles, guide rods and other small machine parts or accessories are described and illustrated. Advantages of tantalum over platinum are discussed.

VISCOSE RAYON. Synfil. *Silk and Rayon 18,* 1101-2, 1104, 1107, 1210-1 (Oct., Nov., 1944). A review of production methods and equipment and of the properties and uses of viscose rayon.

PROTEIN PRODUCT. Oskar Huppert. USP 2 364 034-5, Nov. 28. A rubber-like thermoplastic is obtained by reacting a protein with $ClCH_2COOH$, NH_4SCN and a phenol at 100°C., then adding an aldehyde and heating at 100°C; and a protein fiber, improved in strength, flexibility and water resistance, is prepared from soybean protein and an interpolymer of pseudothiohydantoin-zein, cresylic acid and formaldehyde.

PROTEIN FIBERS. Ford Motor Co., Ltd. Brit. P. 559 745. A solution with high protein content and suitable viscosity for spinning is prepared by dissolving a protein, lye, and a xanthate of an alcohol in water.

CASEIN FIBERS. A. McLean and S. R. Swift (to Imperial Chem. Industries Ltd.). Brit. P. 559 818. Coagulated casein fibers are washed in an antiswelling medium, held for a time in a solution containing an antiswelling agent and urea or a derivative thereof, then hardened under acid conditions with an aldehyde which forms with the urea com-

pound an insoluble condensation product. Rovings and slivers of the treated fiber are strengthened and freed from sticking together.

I, 4a. Nylon type

NYLON FABRICS. George J. Groh. E. I. du Pont de Nemours & Co. *Rayon Textile Monthly 25*, 495-8 (Oct.); *Textile World 94*, No. 11, 104-5, 107, 202, 204 (Nov.); *Fiber & Fabric 97*, No. 3120, 6-10 (Nov. 1, 1944). Stabilization of the stitch in nylon stockings by preboarding produces better fitting seamless hosiery. Work is now in progress on woven nylon fabrics for a variety of garment uses. Dry heat finishing of nylon fabrics is a development which shows some promise but has not yet been commercialized. Military applications suggest a variety of postwar uses for nylon; probably many new nylon yarns will be brought out. Nylon staple fiber has yet to be commercialized but some preliminary work has been done in spinning of nylon waste.

SCREEN. Harry W. Thomas. USP 2 364 404, Dec. 5. Open mesh window screen fabric is woven from nylon type monofils suitably crimped for the purpose.

NYLON. E. I. du Pont de Nemours & Co. Brit. P. 559 676. Nylon filaments and bristles are improved in durability and water resistance by treatment with an isocyanate or isothiocyanate.

NYLON YARN. E. I. du Pont de Nemours & Co. Brit. P. 560 538. Uniformly sized high-twist nylon yarn is made in a continuous sizing and winding operation and has less than 5 turns per inch. The yarn is dried below 50°C to not more than 12% moisture and twisted to more than 15 turns per inch.

I, 4b. Vinyl and vinylidene polymers and copolymers

MONOFILS. Am. Viscose Corp. Brit. P. 560 535. Monofils are formed from a bundle of thermoplastic filaments, e. g. of vinyl resins, by stretching more than 50% during production, twisting and heating under sufficient tension to prevent shrinking. An example is a Vinylite type resin, stretched 700% and formed into a yarn with a twist of 7 turns per inch. The monofils are useful in hosiery, violin strings, artificial horsehair and the like.

VINYL RESIN FIBERS. Am. Viscose Corp. Brit. P. 560 660. Vinylite type resin fibers are improved in solubility behavior and given a shrinkage temperature range above 100°C by chlorinating the resins in solution to a total Cl content of 58-64% before forming the fibers.

I, 4c. Condensation resins

POLYMERS. H. Dreyfus. Brit. P. 560 784-5-6. Fiber forming and film forming condensation polymers are made from urea or thiourea derivatives

such as hexamethylenedithiourea by thermal polymerization.

I, 5. Applications as fibers

BONDED FIBERS. Hugo Boeddinghaus (to Am. Felt Co.). USP 2 364 616, Dec. 12. Dry carded batts of fiber are assembled in layers, with protective aprons between layers, and are passed through a bonding press by tension applied only to the aprons, not to the batts.

MATTRESS. Jas. E. Thompson (to Restmore Mfg. Co. Ltd.). Can. P. 424 393, Dec. 12. A cotton or kapok mattress has layers of fiber oriented lengthwise so that when the layer is folded the fibers are vertical.

I, 5b. Plastic filler

HEEL. Thos. C. Morris (to B. B. Chemical Co.) USP 2 364 744, Dec. 12. A molded heel of fiber-reinforced cured resin has a colored coating of cured resin and cellulose particles.

FIBER REINFORCED PLASTICS. P. W. Rosenfeld (to M. Gibson Ltd.). Brit. P. 559 683. A web of parallelized cotton fibers is introduced into a bath of a plastic composition and allowed to submerge by its own weight while the plastic is gently agitated.

I, 5c. Coated or impregnated products

BOTTLE CAP. Michele Croce (to Certain-Teed Products Corp.). Can. P. 424 360, Dec. 12. Gasket material for lining bottle caps is made of felted cellulosic fibers, waterproofed with a bituminous composition and covered with a layer (not over 10 mils thick) of a gastight, liquidtight material.

II. INORGANIC FIBERS

II, 2. Artificial

GLASS YARNS. Reginald M. Lester. *Textile Weekly 34*, 696 (Oct. 27, 1944). Existing textile machinery with minor modifications can be used to convert glass fiber yarn into woven fabrics. Broken milk bottles are used in the glass for battery separator fiber but for other purposes special glass compositions are prepared.

GLASS FIBER. Jas. F. Hyde (to Fiberglas Canada Ltd.). Can. P. 424 228, Dec. 5. Glass fiber is treated with a metal acetate, chloride, fluoride, nitrate or sulfate and then washed to improve electric surface resistance and flexing strength when wet.

II, 3. Applications as fibers

INSULATION. Howard J. Stewart (to General Electric Co.). USP 2 365 019, Dec. 12. Electric wire is insulated first with a layer of glass fiber in heat-set soybean oil, then with glass fiber braid im-

pregnated and coated with a baked thermally stable synthetic resin.

MINERAL WOOL. E. E. Gaunt and W. May (to Stillite Products Ltd.). Brit. P. 560 095. Mineral wool fiber for making sheet insulation is treated with an aqueous dispersion of an alkyd resin or an oil modified phenolic resin. Fibers bonded in this way may be molded into slabs or sheets for heat or sound insulation.

INSULATING YARN. Wm. F. Astley (to Union Asbestos and Rubber Co.). Can. P. 424 279, Dec. 5. Asbestos is opened, carded, formed into sliver and wound with asbestos cords while some cords are also enveloped in the sliver.

III. NONFIBROUS MATERIALS

NEW CHEMICALS. Anon. *Rayon Textile Monthly 25,* 516, 518, 535, 537 (Oct. 1944). News notes announcing polyethene as a new fiber-forming plastic; a safe stable solution of acetyl peroxide for use as a polymerization catalyst; silicone liquid resins for treating textiles and glass fiber; dimethylethanolamine as a dye intermediate and textile chemical; Vita-Clor as a mildewproof and waterproof flameproofing agent for textiles and paper; a series of vinyl-vinylidene chloride copolymers; a series of polyethyleneglycols useful as synthetic waxes and as plasticizers; vinyl ester resin filaments strengthened by a low temperature treatment; and Floto-foam for heat insulation, sound insulation and as a floating medium in life preservers and rafts.

NEW PRODUCTS. Anon. *Am. Dyestuff Reporter 33,* 539-50 (Dec. 4, 1944). An alphabetical list of new dyes, pigments, textile chemicals and items of equipment developed since Nov. 1943.

III, 1. Plastics, resins, rubber

TEXTILES AND PLASTICS. Plastex. *Textile Recorder 61,* No. 739, 90, 92, 94 (Oct. 1944). Postwar uses of thermoplastic and thermosetting resins as pigment fixatives, bonding agents, aids to dyeing and agents for modifying fiber or fabric properties are forecast on the basis of current developments.

III, 1a. Cellulose derivatives

CELLULOSE ETHERS. Anon. *Silk & Rayon 18,* 1213-4 (Nov. 1944). Cellulose ethers of the cellulose glycollic acid type can be prepared directly from cellulose and an unsaturated nitrile such as acrylonitrile without the intermediate preparation of alkali cellulose. The reaction is carried out in presence of a strong inorganic or organic base and the resulting cellulose ether nitrile is hydrolyzed to the corresponding cellulose ether acid. These ethers are water-soluble and are useful as protective colloids in aqueous emulsions, as thickeners for printing pastes and as stiffeners for textile fabrics.

CELLULOSIC SHEET. Floyd C. Peterson (to Dow Chemical Co.). USP 2 364 028, Nov. 28. A pulp of methylcellulose fibers in water is spread over a perforated support to form a continuous sheet at a temperature above 70°C and is kept hot until residual moisture content is below 50%. The product is a compact methylcellulose sheet which readily dissolves in cold water.

CELLULOSIC FOILS. Bliss Van Every (to E. I. du Pont de Nemours & Co.). USP 2 364 112, Dec. 5. Rendering Cellophane type foils opaque to ultraviolet light with 0.4 to 1% of disodium p, p'-bis-p-(4-aminobenzamido)benzamidostilbenedisulfonate.

CELLULOSE XANTHATE. Wm. R. Schmitz, Jr. (to E. I. du Pont de Nemours & Co.). USP 2 364 392, Dec. 5. Sodium cellulose xanthate is made by mixing solid alkali cellulose with at least 4 times its weight of CS_2 to form a slurry.

FOILS. Frank H. Reichel (to Sylvania Industrial Corp.). USP 2 364 552, Dec. 5. Viscose is extruded through a slit orifice (4-20 mils wide) formed in such a way that the viscose stream reunites after passing any particle lodged in the orifice.

PROTECTING FRUIT. Jos. H. Beatty. USP 2 364 614, Dec. 12. Coating oranges and other fruits with a gel of cellulose and a wax, applied as a surface film.

SAUSAGE CASING. Ralph T. K. Cornwell, Chas. M. Rosser and John A. Yourtee (to Sylvania Ind. Corp.). Can. P. 424 399, Dec. 12. Plasticizing regenerated cellulose sausage casings or shrink caps with a sugar alcohol such as sorbitol.

III, 1b. Polymer resins; natural resins

POLYTHENE. Robert L. Bailey. *Du Pont Mag. 38,* No. 5, 6-9 (Nov., Dec. 1944). A relatively new plastic which is capable of filament formation by cold drawing is polythene, a high polymer of ethene. Its principal uses are based on flexibility and toughness both at high and low temperatures, very low moisture absorption and excellent electrical properties. An unusual feature of polythene is that its density is less than that of water. It can be applied as a coating by flame-spraying and is an excellent waterproofing agent.

POLYTHENE. J. Wakelin. *Silk & Rayon 18,* 1116 (Oct. 1944). High ethylene polymers have numerous possibilities for use as textile fibers because of strength, elasticity, cohesion and low density. The polymers are also useful for coating cotton fabrics and for moistureproofing Cellophane. Chlorinated polythenes (known as halothenes) are being investigated as textile coatings and finishes.

POLYETHYLENE RESINS. Plastics Division, Carbide & Carbon Chemicals Corp., New York, 1944; 12 pp.

Reviewed in *Textile World 94,* No. 11, 222 (Nov. 1944).

III, 1d. Rubbers and rubber derivatives

OXYGEN TENTS. Anon. *Rubber Age (N. Y.) 56, 292* (Dec. 1944). Pliofilm is superior to rubberized fabric for oxygen tents in that it is transparent, and can be discarded or reclaimed for other purposes after a single use, thus saving the labor and expense of cleaning and sterilizing.

III, 3. Surface active compounds, textile assistants

TEEPOL X. A. V. Billinghame, Technical Products, Ltd. *Textile Mfr. 70,* 451-5, 459 (Oct. 1944). Teepol X is a branched chain sulfated alcohol (Na salt) with exceptional stability, high cold water solubility and high potency as a wetting agent under severely adverse conditions. It has many uses in wet processing of textiles because of these properties and because of its ready adsorption on fibers, especially wool.

IV. FIBER TO YARN

RAYON ON COTTON MACHINERY. Textile *World 94,* No. 11, 135, 137 (Nov.); *Textile Bull. 67,* No. 5, 21-2, 48-9; No. 6, 22-4, 26, 28, 20, 50-4 (Nov. 1 & 15, 1944). Papers on settings and methods for handling rayon on the cotton system of textile machines, read before the Southern Textile Association, include the following subjects; Fiber preparation (R. M. Jones, Saco-Lowell Shops); postwar handling of longer staple length fibers (R. J. McConnell, Whitin Machine Works); relations of denier to length (E. H. Dreher, Am. Viscose Corp.); drawing and spinning rayon staple (F. S. Culpepper, Am. Viscose Corp.); rayon on cotton machinery (Heath O. Kennette, E. I. du Pont de Nemours & Co.); speeds and settings (V. E. McDowell, Rosemary Mfg. Co.); slashing and weaving (Frank D. Lockman, Jr., Brandon Corp.).

IV, 1. Preparation for spinning

LINEN MANUFACTURE. Flaxman. *Textile Recorder 61,* No. 739, 55-7 (Oct. 1944). Recent improvements in machinery for processing flax and making linen are reviewed.

RAYON YARN THROWING. Edwin C. Dreby. *Am. Dyestuff Reporter 33,* P518-21 (Dec. 4, 1944). Variations in tension and steaming during the throwing of viscose, bemberg and acetate yarns for hosiery may strongly influence the appearance of the finished hosiery. Dulling and diminished dye affinity are among the defects which may be caused by such variations, though other factors may also be responsible. The sensitivity of the 3 types of yarn to irregularities and consequent defects is not the same in all cases.

STOP MOTION. Walter J. Scott. USP 2 364 824, Dec. 12. A stop motion for drawing frames has successive circuit controlling devices, one governed by each yarn in its path from the draft roll to the packaging device.

STAPLE FIBER. Am. Viscose Corp. Brit. P. 560 670. In a machine for cutting continuous filament rayons into staple fiber of varying lengths the filament bundle is fed at a constant speed in the direction of its length and cut by a series of differently spaced cutters.

SLIVER LAPPING. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 560 724. An automatic full stop mechanism for sliver lapping or core covering machines is operated by the lapping mechanism if a strand of the lapping material breaks.

DRAFTING. Geoffrey Dakin (to British Cotton Industry Research Assoc'n). Can. P. 434 317, Dec. 12. A control device for fibers between the drafting rolls of a spinning machine rests loosely on an endless revolving apron conveyer with which it is coacting.

IV, 2. Spinning, doubling, twisting, winding

TENSIONING DEVICE. Frederick G. Kraft (to E. I. du Pont de Nemours & Co.). USP 2 364 375, Dec. 5. A yarn-driven roll has a brake against which it is yieldably held in frictional contact against the pull exerted on the yarn in drawing it from the roll.

CLEARER ROLL. Dominion Textile Co., Ltd. Brit. P. 560 381. A clearer roll for spinning frames is a hollow cylinder having a cloth cover with its free ends turned in at the ends of the roll and held in place by a plug.

IV, 2a. Cotton, vegetable fibers

COTTON SPINNING. Jas. H. Dawson. *Indian Textile J. 54,* 457-8 (Sept. 1944). Problems of power and power transmission are discussed with respect to cotton spinning machinery with belt or rope drives.

MACHINE DRIVES. Metropolitan Vickers Electrical Co., Ltd. *Textile Mfr. 70,* 443-4 (Oct. 1944). Illustrated description of individual motor drives for spinning or doubling frames and for flax yarn dryers. Elimination of counter shafting permits a marked improvement in lighting and cleanliness, with safer and more pleasant working conditions.

SPINNING COTTON. George Clapperton. *Textile Mfr. 70,* 487-9, 492 (Nov. 1944). After reviewing each machine from the opener to the drafting frame in a cotton spinning system no modern improvements are found in design or construction which are materially better than most of the machines already in use. The problem of high drafting needs serious attention; for many kinds of yarn it is eminently simple but it should not be allowed to supersede entirely the auxiliary processes which have stood the test of time.

SPINNING FLAX. S. A. G. Caldwell. *Textile Mfr. 70,* 490-1 (Nov. 1944). Automatic doffing and other improvements in making yarns by dry

or wet flax spinning are reviewed and their advantages are discussed.

PREPARATION AND SPINNING OF FLAX ON JUTE MACHINERY. Indian Central Jute Committee, Research Laboratory, Tollygunge, Calcutta, 1944; Technological Pamphlet No. 1, 1944; price 4 annas. Reviewed in *Indian Textile J. 54,* 467 (Sept. 1944).

IV, 2b. Wool; worsted

MULES FOR WOOL SPINNING. W. J. Guy. *Textile Recorder 61,* No. 739, 48 (Oct. 1944). The invention of a 3 speed spinning mule with automatic change from one speed to the next dates back to 1897. Modern application of such a mule to wool spinning has been improved by providing the optimum of twist flow with suitable scrolls. A mule of this type can be adapted to almost any type of yarn found in the wool trade.

WOOL ON COTTON MACHINES. W. Tabor Robinson, *Textile Bull. 67,* No. 7, 30-1 (Dec. 1, 1944). Breakage of sliver is a serious problem in processing wool on cotton textile machinery. Selection and maintenance of drawing rolls is another problem requiring careful attention.

WORSTED SPINNING. H. D. *Textile Recorder 61,* No. 739, 45-7, 57 (Oct. 1944). Mechanical improvements in worsted spinning are reviewed with particular reference to their probable influence on the postwar industry.

WORSTED YARNS. F. Hargreaves. *Textile Mfr. 70,* 478-9 (Nov. 1944). There is need for improvement in the technique of spinning quality worsted yarns but the wide foundation of fundamental knowledge on which to base a program of systematic improvement is lacking. For improvements in machine design the spinner's advice is needed. Mill trials are also essential to the solution of problems involved in spinning better yarn.

IV, 2c. Silk

SPINNING SILK. H. Neville Sykes. *Textile Mfr. 70,* 493-4 (Nov. 1944). In spinning silk waste on wool machinery some difficulties are encountered due to static charges. One trouble is a serious loss of yarn strength related to fluctuations in atmospheric static charges. Remedies such as atmospheric humidification and grounding of machines are discussed.

IV, 2d. Rayon

LONG STAPLE FIBER. James Chatfield. *Textile Age 8,* No. 11, 98, 100-4 (Nov. 1944). Roll settings, special drafting assemblies and other details in the care and management of spinning equipment for use with long staple fibers are discussed.

RAYON STAPLE FIBER. S. A. G. Caldwell. *Textile Mfr. 70,* 445-6, 459 (Oct. 1944). Possibilities for making linen-like yarn from rayon staple fiber on flax spinning machinery include viscose rayon and its blends with acetate in a longer staple length (usually 4.5 in.) than would be useful on cotton spinning machinery. Certain adjustments of the machinery and precautions in operation are necessary for successful spinning of rayon staple.

IV, 2e. Winding

YARN WINDING. Chas. L. Hivick and Geo. L. McLuckie (to Celanese Corp. of America). USP 2 364 714, Dec. 12. A bobbin winder has an idler pulley with a flat face for accelerating and deaccelerating the motion of the traverse bar, and a device for continuously varying the winding action by a stepwise motion relative to the package being formed.

WINDING MACHINE. Walter Siegenthaler (to Maschinenfabrik Schärer). USP 2 365 115, Dec. 12. A winder has a gear box the walls of which form a mounting frame while a spindle in the box projects at one end as a frictional drive and at the other end as a spool mount. A traversing disk is mounted on the spindle inside the box.

WINDING MACHINE. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 559 927. A traverse mechanism for cheese winding machines uses a spirally grooved roller and a central guide. The spiral groove begins near the center of the roll and extends to right and left respectively, each terminating in a short reversing end.

WINDING MACHINE. Universal Winding Co. Brit. P. 559 958. A magnetic device for identifying pirns on a winding machine automatically applies a ticket in such a way that the yarn wound on the pirn holds the ticket in place.

COP WINDER. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 560 267. Cops with tapered ends are formed by winding on the yarn between a pair of tapered rolls; a grooved roll effects the traverse and bears on the tapering end to assist in forming and compressing it.

WINDING MACHINE. Maschinenfabrik Schweiter A. G. Brit. P. 560 319. A cross winding mechanism for winding "pineapple" cones on cone-shaped bobbins has a driving disc and a slotted skew disc so arranged that the slot determines the shape of the final cone.

WINDING MACHINE. C. H. Hampson (to Courtaulds, Ltd.). Brit. P. 560 657. A device for winding yarn packages with both ends tapered has a roll for the package and a thread guide at one end of the arm which has a rod passing through a slot in a lever pivoted to a traverse rail so as to oscillate about its fulcrum in reciprocal motion parallel to the roll.

HANK REELS. W. Gibson. Brit. P. 560 863 and 560 890. A reel for close side by side hank windings has a yarn guide and drag to prevent whipping of yarns passing to a swift. The windings are au-

tomatically divided into cuts as they are wound by cross members with sharp edges spaced along the swift. Manual and automatic stop devices may be included in the mechanism.

IV, 3. Processing and finishing

RAYON CAGE. Arthur F. F. Mothwurf (to Industrial Rayon Corp.). USP 2 365 096, Dec. 12. A thread storage drum has 2 rayon spinning and drying cages, interleaved and mounted in such a way as to advance thread spirally over the cage support, the cage bars being resiliently supported and confined to radial motion with respect to their support.

STRETCH ELIMINATOR. Oscar D. Grimes, Sr. USP 2 365 069, Dec. 12. A machine for reducing cord stretch to a predetermined range comprises a tensioning device after which comes a rotating cord wetter and a tensioning device and stretcher for the wet cord. The stretcher has 2 tapered grooved rolls around which the cord winds from the small to the large end.

YARN SPLICER. Clement J. Charnock. Can. P. 424 170, Dec. 5. A yarn splicer has two yarn end holders on a single support, with a mechanism for untwisting both ends, pulling out loose fibers, joining and retwisting the ends.

IV, 4. Products (thread, yarn, cord, etc.)

TIRE CORD. A. Scholes, British Enka Ltd., *Dyer & Textile Printer 92,* 387-8 (Nov. 10); *Textile Mfr. 70,* 449 (Oct. 1944). Cotton tire cord is superior to rayon in adhesion to rubber but inferior in certain other properties, especially yarn strength. It is probable that cotton adhesion can be still further improved and it may be that treatments can be devised to improve the inferior tensile strength of cotton tire cord under service conditions. There is a need for scientific study of the performance characteristics of cotton in comparison with rayon.

BONDED ROVING. T. O. Ott, Jr., Textile World. *Textile World 94,* No. 11, 109, 111 (Nov. 1944). The Jennings process for bonding roving with a resin and forming high strength cotton yarns therefrom as developed by the Dan River Mills is described and illustrated. In adapting resin bonding to stretch setting for tire cord a compromise is necessary between high yarn strength and residual elongation.

HARD FIBERS. C. Ord. *Fibres, Fabrics & Cordage 11,* 391-2, 429, 431 (Oct., Nov., 1944). Methods and machinery used in making rope from manila and sisal fibers are described and illustrated, with emphasis on Good's machine for making sliver and for performing subsequent operations.

RAYON TIRE CORD. C. C. Brumleve, the Girdler Corp. *Rayon Textile Monthly 25,* 500-1 (Oct.); *Textile Age 8,* No. 11, 86, 88, 90 (Nov.); *Textile Bull. 67,* No. 5, 24, 26 (Nov. 1, 1944). High frequency heat for twist setting of high tenacity yarn used in rayon tire cord permits rapid uniform

heating throughout large packages so that the process does not impede continuous line production. At the same time it saves much of the floor space taken up by the conventional heating room.

TIRE CORD. J. T. Adams, Sears, Roebuck & Co. *Rubber Age (N. Y.) 56,* 168-72 (Nov. 1944). Nylon has the advantages of low density and high tenacity in tire cord, but has some disadvantages and is much too expensive for use except under military or other necessity. Rayon and cotton each have certain points of superiority; the price advantage of cotton has largely or entirely disappeared so the competitive position of cotton is much weakened since the war began.

YARN FROM ROVING. H. M. Chase, Riverside and Dan River Cotton Mills. *Am. Dyestuff Reporter 33,* P474-8 (Nov. 6); discussion, P560-2 (Dec. 18); *Cotton 108,* No. 11, 105-6 (Nov. 1944). By a combination of resin bonding and stretch setting it is possible to produce high strength yarn from a cotton roving without spinning. The product approaches the ideal yarn in 3 respects, namely absence of shearing due to twist and consequent freedom of fibers to adjust under tension; the higher uniformity of a roving as compared with a spun yarn; and greater softness of the roving as compared with yarn.

TIRE CORD. Ralph F. Nickerson (to Nat'l Cotton Council of America). USP 2 364 467, Dec. 5. The flexing life of cotton tire cord is improved by stretching the cold wet cord, heating it to 85°C and cooling under tension.

V. YARN TO FABRIC

MACHINERY FOR MODERNIZATION. George A. Bennet, *Textile Recorder 61,* No. 739, 49-54 (Oct. 1944). Among the modern textile machines which would be needed for postwar revitalization of the Lancashire textile industry are the Roto-Coner and Barber-Colman automatic spooler, the Northrop bobbin-changing loom, the Northrop-Stafford automatic shuttle-changing loom and the Crompton & Knowles multiple shuttle automatic loom.

TEXTILE PROCESSES. Recruitment and Training Dept., Cotton Board. *Textile Mfr. 70,* 447-8 (Oct. 1944). A refresher conference held at Manchester, Sept. 8-10, included papers by George Clapperton, textile education; L. Rose, developments in rayon yarns and fibers; H. Ashton, spinning rayon staple fiber; E. Cotterill, rayon weaving; P. A. Holt, dyeing and finishing rayon; J. Buckley, cotton, spinning and doubling; E. Snowden, cotton preparation; W. Barker, cotton weaving.

COTTON TEXTILE MISSION TO THE U. S. A. A Comparison of American and British Cotton Spinning and Weaving Practice. H. M. Stationery Office, London, 1944; 78pp.; price 10. 3d.

Summarized in *Textile Mfr. 70,* 472-5 (Oct. 1944); editorial comment, p. 469-70.

V, 2. Sizing

SIZING NYLON. Universal Winding Co. *Can. Textile J. 61,* No. 24, 45-6 (Dec. 1, 1944). The single end method of sizing is preferred for nylon yarns. Suitable machine speeds and machine procedure are outlined. Coning tension must be as low as possible and the temperature and humidity must be controlled to prevent accumulation of static charges.

SIZING RAYON. C. B. Kinney, E. F. Houghton & Co. *Rayon Textile Monthly 25,* 498-9 (Oct. 1944). For sizing filament yarns of acetate or viscose rayon casein size has some advantages over gelatin. Soy bean protein also shows some promise of particular merit for sizing such yarns. Effects of temperature, concentration and other factors are discussed.

V, 3. Weaving

JACQUARD DESIGN. Shed Manager. *Textile Weekly 34,* 614, 616, 618 (Oct. 13, 1944). The construction of the card repeating machine for punching Jacquard fabric design cards is described and illustrated.

2000 YEARS OF SILK WEAVING. Los Angeles County Museum, Cleveland Museum of Art and the Detroit Institute of Arts. E. Weyhe, New York City, 1944; price $2.50.

Reviewed in *Canadian Textile J. 61,* No. 22, 6 (Nov. 3, 1944).

V, 3a. Looms

HANDLOOM. V. G. Ramakrishna Iyer. *Indian Textile J. 54,* 455-6 (Sept. 1944). Handloom weaving practices are described as applied to cotton, silk and lace in the Tanjore district of South India. Some blends of cotton and silk are woven.

WEAVING RAYON. J. W. Hutchinson. *Silk & Rayon 18,* 1220-1 (Nov. 1944). Looms for weaving rayon or nylon must be kept in a higher state of efficiency than those used for weaving wool fabrics since there is no concealment of defects by loose fibers or shrinkage. Evenness is therefore particularly important and must be closely watched by the weaver. Shuttles must be fur-lined and must be kept in good condition to avoid abrasion marks and undue friction on the warp.

LOOM. Clifford Darwin (to Crompton & Knowles Loom Works). USP 2 364 954, Dec. 12. A weft-replenishing loom using 2 shuttles has several stacks of reserve bobbins, and a selector operating in such a way that a group of bobbin stacks serves one shuttle and a single stack serves the other shuttle.

V, 3b. Loom parts

LOOM REED. H. E. Wenrich. *Rayon Textile Monthly 25,* 505-6 (Oct. 1944). Equipment for cleaning and polishing loom reeds is described and directions are given for rust removal, cleaning and drying.

WEFT WINDER. Muschamp Taylor Ltd. *Textile Manufacturer 70,* 442 (Oct.); *Textile Weekly 34,* 552 (Oct. 6); *Silk and Rayon 18,* 1228 (Nov. 1944). Illustrated description of the "Hacoba" automatic pirn winder. Automatic changing of pirns is carried out in units of 4.

LOOM. Anselm De Ghetto (to Nat'l Rubber Machinery Co.). USP 2 364 276, Dec. 5. A loom is adapted to make woven tubing by supplying warp threads to the weaving unit around a tension roll driven in synchronized relation with the feed device.

CLOTH TAKEUP. John W. Jones. USP 2 364 534, Dec. 5. A cloth takeup mechanism for looms has a rack and pinion device engaging with a pressure member.

LOOM BRAKE. Norman Fletcher and Walter Y. Robb (to Crompton and Knowles Loom Works). USP 2 364 703, Dec. 12. The pullover shaft of an Axminster loom has a pair of brake shoes joined by a link with two eccentrics, one for each shoe, for applying and releasing the braking force.

SHUTTLE. Heinz Menking (to Aluminum Corp. of America). USP 2 364 740, Dec. 12. A shuttle is made of Mg alloy and has a smooth wear-resisting noncracking external metal coating.

PICKER CHECK. Horace M. Phillips. USP 2 364 914, Dec. 12. A picker stick check has an adjustable member below and along the lay of the loom, bearing a vertical arm with a leaf spring which engages the picker stick in its outward stroke in the shuttle box.

LOOM HARNESS. John J. Kaufmann (to Steel Heddle Mfg. Co.). USP 2 364 982, Dec. 12. A loom harness connector mounted on the heddle frame rail has 2 side members against the sides of the rail, and a detachable saddle between them.

TEMPLE ROLL. Alfred Lagasse. USP 2 364 983, Dec. 12. A loom temple roll is threaded and the threads are recessed at intervals to form teeth.

WEAVING SEMIGAUZE. Maurus Banyai, E. Harris and A. Goldberg. Brit. P. 559 744. A warp shedding mechanism for weaving semigauze and similar fabrics has a roll of closely spaced discs arranged for joint angular movement around a common axis. Each disc has an eye through which one warp is led and a slot through which another warp is led.

LOOM. J. Webster (to H. Seal & Co., Ltd.). Brit. P. 560 330. An improved loom has a mechanism which makes two picks during each revolution of the main shaft, sheds after each pick and speeds up after every second pick.

V, 3c. Control devices; stop motions; bobbin selectors

WORSTED YARNS. F. Cleyn. *Textile World 94,* No. 12, 81 (Dec. 1944). Stop motions can be effectively used to eliminate variations in yarn counts. This is important in making worsted fabrics since 10% variations in yarn counts will introduce a barred effect in the fabric.

LET-OFF MECHANISM. Walter Y. Robb (to Crompton & Knowles Loom Works). USP 2 363 996, Nov. 28. A loom driven by an electric motor has a controlled switch arrangement whereby excessive tension on the warp turns off the motor and stops the loom.

BOBBIN SELECTOR. Victor H. Jennings (to Crompton & Knowles Loom Works). USP 2 364 978, Dec. 12. A weft-replenishing loom has 2 shuttles and 2 stacks of reserve bobbins for each; each stack has a bobbin release and the selector is movable into 4 positions, one for each stack.

BOBBIN SELECTOR. Victor H. Jennings and Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 364 979, Dec. 12. In a weft replenishing mechanism the bobbin selector has a position for each bobbin releaser, and the selector operates in connection with a stop moving from position to position to keep the selector from entering the wrong position.

STOP MOTION. Walter Y. Robb (to Crompton & Knowles Loom Works). USP 2 365 008, Dec. 12. An electromagnetically operated stop motion for Axminster looms has 2 electric switches arranged so that one opens and the other closes at the tuft forming stage, and the stop motion acts if both switches are closed at the same time.

STOP MOTION. Jos. P. Blouin. USP 2 365 044, Dec. 12. A stop motion for detecting a failure in the filling on a loom has a lever and a dagger which strikes the lever only when a filling fails.

STOP MOTION. Samuel T. Pugh. USP 2 365 106, Dec. 12. The center fork stop mechanism of a loom is so connected to a lay-operated bobbin transfer, a thread cutter and a gripper that the loom stops if the thread cutter and gripper fail to hold the thread during the transfer cycle.

V, 3e. Defects

THREAD BREAKAGE. A. Sumner. *Textile Weekly 34,* 570, 572, 574 (Oct. 6, 1944). Possible causes of thread breakage in weaving fabrics are considered, e. g. bent spikes on rolls or rings, variable tension and impact of shuttle tips against the fabric directly above a hard surface.

V, 4. Knitting

KNIT PATTERNS. H. D. Buck. *Textile World 94,* No. 11, 119, 121 (Nov. 1944). Pattern designs for circular knitting mechines are not difficult to tabulate. Additional feeds on the machine increase the design possibilities. The number of needles is a governing factor and it is essential to mark the starting point and set the wheels correctly.

KNITTABILITY. G. M. Cooper. Dixie Mercerizing Co. *Am. Dyestuff Reporter 33,* P524-8 (Dec. 4); *Textile World 94,* No. 12, 94-5 (Dec. 1944). Softness is an essential but not sufficient property of knitting yarns. It is not correct to classify all yarn finishing agents as softeners; finishes should be designated under different types according to their effect. The cotton fiber itself is soft unless parchmentized and harsh yarn is due to factors which prevent the fibers from assuming their normal position. Lubricants for relieving this condition are fiber-fiber lubricants and are usually not suitable as yarn-metal lubricants. Mercerized yarns are more adaptable to processing and more easily lubricated than unmercerized yarns.

KNITTING HOSIERY. Julian W. Hughes. *Southern Knitter 8,* No. 12, 21-2, 42 (Dec. 1944). The Banner split-foot machine for knitting stockings is described and illustrated.

RAYON WARPING. H. Marsden. *Textile Mfr. 70,* 352-4, 400-1 (Aug.-Sept. 1944). The causes and effects of static electricity in high speed rayon warping are reviewed and methods of preventing undesirable effects are discussed.

WARP KNITTING. Anon. *Textile Mfr. 70,* 497 (Nov.); *Textile Weekly 34,* 780, 782, 784 (Nov. 10, 1944). Illustrated description of the new F. N. F. high speed warp knitting machine which in some respects is revolutionary in design and performance.

HOSIERY. Harold E. Houseman (to Scott and Williams, Inc.). USP 2 364 217, Dec. 5. Knitting stockings on a 2-feed circular knitting machine by forming a rib top at one feed and a leg portion at the other while feeding yarns from both feeds to the needles, then forming a split portion above the heel by reciprocating knitting at each feed.

INSULATED WIRE. Clyde N. Stover (to Western Electric Co.). USP 2 364 560-1, Dec. 5. Knitting a fabric cover around an electric wire by passing the wire through a knitting head while rotating it at a speed different from that of the needle cylinder; and a fabric cover made in this way.

STOP-MOTION. Hemphill Co. Brit. P. 559 435. A stop-motion for knitting machines is combined with the wrap thread by means of a movable element which acts when a thread breaks or becomes too slack and is connected to the belt shifter for stopping the machine.

KNITTING. E. Brooksby and F. E. Deans (to Bentley Engineering Co.). Brit. P. 559 533. In knitting machines having independent movable needles the feed yarn is laid on the nose of the needle hook and afterwards the hook and yarn are adjusted to slide the yarn into the hook.

STITCH TRANSFER DEVICE. E. Brooksby and F. E. Deans (to Bentley Engineering Co., Ltd.). Brit. P. 559 543-4. An improved stitch transfer device for circular rib knitting machines of the superposed cylinder type has its body in the needle track with a feed near the end to embrace the needle.

KNITTING MACHINE. H. H. Holmes and J. C. H. Hurd (to Wildt & Co., Ltd.). Brit. P. 559 712. A patterning mechanism for circular knitting machines has pelerine instruments arranged with the wrap thread guide in radial tricks in the upper face of a rotating dial. The arrangement increases the capacity of the machine for producing patterns or designs without increasing the required floor space.

KNITTING HOSIERY. A. T. May and F. Winter. Brit. P. 559 926. A special running-on course which can be operated by unskilled labor is provided on full-fashioned hosiery knitting machines. The course comprises spaced eyelet holes at the edge of the sole, formed by transferring needle or sinker loops to adjacent needles.

SPLICING THREAD. R. N. Toone (to B. Toone (Nottingham) Ltd.). Brit. P. 559 952. For accurate presentation of the splicing thread on knitting machines the withdrawn thread is positioned for accurate reintroduction by a device which receives the thread when the feeder is in its operative position and places the thread correctly as the feeder descends.

KNITTING MACHINE. H. N. and E. E. Smith. Brit. P. 560 192. In an improved knitting machine new loops are formed through first one, then another of a course-wise series of loops, each looping movement occurring relatively to a guard which holds open the loop being penetrated. New loops are received by acceptors as old loops are released from the guards.

MOCK FASHIONED HOSIERY. C. J. Toon (to J. Toon & Sons, Ltd.). Brit. P. 560 312. Mock-fashioned stockings are made by knitting a tubular length of leg, ankle and foot parts on a seamless machine, flattening and cutting the foot portion to provide a heel with an extended strip which is then folded back on itself and joined at the edges, then joined to the adjacent edges of the heel to form the instep, toe and sole.

SELVAGE. Eugene St. Pierre (to Hemphill Co.). Can. P. 424 234, Dec. 5. A selvage for knit (not ribbed) fabrics has a nonraveling edge with elastic yarn held at alternate wales only and a plain yarn knit in these alternate wales but only tucked at intermediate wales.

V, 5. Pile fabrics, laces, embroideries, netting

PILE FABRICS. Anon. *Textile Weekly 34,* 568-9, 876, 878 (Oct. 6 & Nov. 24, 1944). Illustrated description of knives and equipment for cutting the pile on velvet and of equipment for the dyeing and finishing of velveteen.

CAMOUFLAGE NETTING. St. Clair M. Hale (to Parker-Wolverine Co.). USP 2 364 289, Dec. 5. Paint is mixed with loose fibers and a net is passed through the mixture, then through squeeze rolls so that the network openings are partly crossed and filled by painted fibers.

PILE FABRIC. R. S. Allen. Brit. P. 560 290. A machine for making cemented pile fabric has a confining passage to receive a pleated fabric from separator strips which are fed to the device from a strip holding magazine. The pleating mechanism folds a warp around the delivered strips.

V, 6. Mechanical processing

TREATING FABRICS. Albert Mellor and Ralph J. Mann (to British Celanese, Ltd.). USP 2 364 157, Dec. 5. Woven fabrics are passed in open width between two rolls, one of which has closely spaced resilient ridges spiraling from the center to each end of the roll.

SLITTER. John A. Aycock (to Rock Hill Printing and Finishing Co.). USP 2 364 888, Dec. 12. Reels of cloth cut and wound on a slitting machine are doffed intact as they are assembled and grouped by the machine; and the strips are cut to shorter lengths and rewound.

V, 7. Products; design; construction

APPEARANCE DEFECTS. J. Kunzle. *Textile Mfr. 70,* 496 (Nov. 1944). Unwanted moire effects on rayon fabrics were traced to flattening of the thread due to uneven tension, storing tightly wound cloth rolls on top of each other or other sources of variable pressure. In some cases the effects can be removed by high pressure calendering, or by swelling the flattened threads in an alkaline bath.

DUCK DEFECTS. Thomas Nelson. *Textile World 94,* No. 11, 131, 133 (Nov. 1944). Twelve defects in duck fabrics are described and illustrated. A remedy is specified for each defect. A distinction is made between acceptable and unacceptable imperfections according to the standards of the Quartermaster Corps.

HEAVY FABRICS. W. Haigh. *Textile Mfr. 70,* 413-4 (Sept. 1944). Although heavy yarn count employed in a single cloth structure to produce heavy winter weight fabrics tends to make a coarse cloth it is possible to obtain a very pleasing effect by careful attention to dyeing and finishing. Several plans are presented for compound weave structures using backed, double or multifold cloth and a variety of special weaves to obtain winter weight fabric.

HOSIERY FABRICS. W. A. Dutton, World Industries Research Assoc'n. *J. Soc. Dyers & Colourists 60,* 293-301 (Nov. 1944). Shrinkage and wearing quality of some varieties of knit wool goods depend in part on the knitting structure. When machines of the most suitable gauge are not available it would be best to permit a separate weight

specification for machines of different gauges in order to adapt the knitting structure to service conditions. Tests of the influence of knitting structure on shrinkage and felting of untreated wool and of wool after chlorination (to prevent shrinkage) are recorded with photographs of test samples.

INSECT SCREEN. Harry H. Purvis, Chicopee Mfg. Corp. of Georgia. *Cotton 108,* No. 12, 96-8 (Dec. 1944). Lumite insect screen cloth is woven from saran monofils on regular cotton looms and is much more durable than wire screens under tropical conditions. Lumite is also used for insoles of jungle boots to improve ventilation and help prevent fungus foot diseases. The fabric is non-flammable. It is expected to have numerous postwar uses.

SPUN BLEND SUITING. Anon. *Am. Wool & Cotton Reporter 58,* No. 46, 7, 9, 12 (Nov. 16, 1944). A spun suiting of viscose and acetate staple fiber yarn is made with ply yarns both in warp and filling. This makes the color effect more even than with single yarn. The fabric construction is described and illustrated.

WOOL BLENDS. Fred Sykes. *Textile World 94,* No. 12, 109 (Dec. 1944). The newer synthetic and artificial fibers tend to cause defects in wool blend fabrics. In shoddy blends the diameter of the respective fibers should be closely related. The bright colors in a heather mix are blended first with each other and then with the base color to impart the proper color to the final blend.

WOOL FELT. Korbel & Colwell, Inc. *Rayon Textile Monthly 25,* 507-8 (Oct. 1944). Mechanical uses for wool felt are described and illustrated. There are many in the textile industry, one of the outstanding uses being antivibration machine mountings. Wool felt mountings are especially effective at high vibration frequencies.

YARN CREPES. Anon. *Am. Wool & Cotton Reporter 58,* No. 49, 11-2, 41-2 (Dec. 7, 1944). A novelty yarn crepe blended of viscose and acetate rayon is a combination of hard twisted and ordinary rayon yarn. The fabric construction is described and illustrated.

HOSE. Bernard Wilkinson (to Wilkinson Rubber Linatex Ltd.). USP 2 364 332, Dec. 5. Flexible hose has a synthetic material as core, bonded to a fabric layer, reinforced with a spiral or regenerated cellulose wire and an outer fabric layer bonded to the inner layer between the reinforcing strands.

HOSIERY. Geo. F. Lang. USP 2 364 636, Dec. 12. Sheer full-fashioned stockings have a strain-distributing band around the top. The band is elastic lengthwise but not crosswise, and has snap fasteners for garters.

HOOKED RUG NEEDLE. Francis W. Sharkey and Frederick J. Redcliffe. USP 2 365 013, Dec. 12. A machine for making hooked rugs has a

reciprocated needle and a reciprocated looper, both joined by eccentric connections to a drive shaft while the looper has a pin-and-slot lost motion device for interrupting its reciprocating motion to retain a loop as the needle retracts.

PRESHRUNK AIRCRAFT FABRIC. Brit. Celanese Ltd. Brit. P. 560 378. Regenerated cellulose yarns made by hydrolyzing acetate rayon are preshrunk by treatment with a mercerizing lye such as a solution of 750 parts NaOH and 1000 parts water.

FABRIC TUBING. Percy Gardner and Ralph Kagan (to Spiral Bagging Machine Corp.). Can. P. 424 272, Dec. 5. Spiral wound tubing is made from a sheet of fabric by winding it around a mandrel with sufficient overlap to form a flat seam and sewing the seam.

V, 8b. Coated or impregnated products

VINYL LATEX. George W. Flanagan, B. F. Goodrich Co. *Modern Plastics 22,* No. 3, 9-12 (Nov. 1944). Aqueous dispersion of vinyl resin (trade name Geon) resembles rubber latex in several respects. It is useful for coating fabrics in finishes ranging from dull to a mirror-like polish. Applications include tenting, tarpaulins, upholstering fabrics, wallpaper, protective garments, food wrappers and insulated wires.

FIBER-RUBBER BOND. Edward T. Lessig and Edward N. Cunningham (to B. F. Goodrich Co.). USP 2 363 981, Nov. 28. Fibers are bonded to rubber by coating the fiber material with rubber containing a chemical stiffener, bringing the coated fiber material into contact with raw rubber and vulcanizing the composition.

PACKING. Gerald W. Neesen (to Johns-Manville Corp.). USP 2 364 383, Dec. 5. Ring packing has a preformed heel of fabric layers impregnated and bonded with a hardening composition, and a flexible hardened lip with ribs filling grooves in the heel.

FLOCKED FABRIC. Glen S. Hiers (to Collins & Aikman Corp.). USP 2 364 847, Dec. 12. A rubber cement for bonding flock to a fabric carries in dispersion a finely powdered hard mineral filler such as Ca carbonate or silicate, hydrated alumina or the like, and about 1/10 as much of a tough, thermoplastic reaction product of raw rubber and a phenol.

GIRDLE. Abraham N. Spanel. USP 2 365 016, Dec. 12. Girdles are made of fabric firmly bonded to a thin perforated film of thermoplastic, with perforations and fabric interstices communicating for the sake of ventilation.

COATED FABRICS. R. H. Czeczowitzka (to Texproof Ltd.). Brit. P. 559 820. Permeable fabrics are impregnated with a volatile liquid and then with an organic polymer which is capable of emulsifying in the liquid. This produces an emulsified layer on the surface of the fabric with minimum penetration.

FABRIC ADHESION. U. S. Rubber Co. Brit. P. 559 986. Fabrics are bonded to rubber by coating the fabric with a rubber dispersion containing a quarternary ammonium compound in which the substituents may be alkyl (up to hexyl), aryl, aralkyl or heterocyclic radicals. The treated fabric is dried before applying the rubber and vulcanizing.

AIRCRAFT FABRIC DOPE. J. R. Myles, F. J. Siddle and D. Whittaker (to Imperial Chemical Industries Ltd.) Brit. P. 560 168. Dope for airplane wing fabrics is made by chlorinating a polythene resin to 60-70% Cl by weight containing about 0.1% of a naphthyl glycide ether and 0.2% of phenyl salicylate.

PLASTICIZERS. Brit. Industrial Plastics Ltd. Brit. P. 560 748. Nonvolatile water-insoluble fabric plasticizers are made by compounding an aldehyde-amine resin with a dihydric or trihydric alcohol or an ester thereof. Alcohols for this purpose are made by thermal polymerization of polyene fatty acids or esters followed by hydrogenating the polymer to the alcohol. The products are useful for coating fabrics.

WINDOWS. Thos. C. Woodman (to Henry Dreyfus). Can. P. 424 425, Dec. 12. Translucent window panes are made of a net-like fabric with its meshes closed by a film of cellulose acetate.

V, 8c. Laminates

LAMINATES. Anon. *Product Eng. 15,* 674-8 (Oct. 1944). Stretchability, an essential feature of fabrics for laminates, is offered by cotton to the extent allowed by crimp and twist, and by pulling on the bias (generally cotton can be elongated about 10% lengthwise and crosswise; about 30-40% on the bias). Low pressure hot forming of laminates offers much promise, and there is some hope that a fabric permitting 300% stretch will be available. Properties of some phenolic resin laminates are tabulated.

LAMINATES. W. I. Beach, North American Aviation, Inc. *Modern Plastics 22,* No. 3, 34-7, 76-7 (Nov. 1944). Thermo-elastic forming of flat laminated sheet material is one of the low pressure molding methods but differs from the conventional procedure. Even the thermosetting resins are capable of 4 or 5 reshaping operations and some will tolerate many more. When these laminates are stretched on the bias the fabric elongates more than twice as much as when pulled either crosswise or lengthwise. Even such large parts as a 90" ammunition guide chute can be made by thermo-elastic forming.

LAMINATES. E. O. Hausmann and A. E. Parkinson, Continential Diamond Fibre Co. and G. H. Mains, Nat'l Vulcanized Fibre Co. *Modern Plastics 22,* No. 3, 47-50, 68-72 (Nov. 1944). Tests of heat resistance under various conditions are reported for laminates with a paper base and with a cotton fabric base, in comparison with laminates having an inorganic (asbestos or glass) fiber base.

Effects on flexing strength and impact strength are shown in tables and curves.

PORTABLE HANGARS. Anon. *Modern Plastics 22,* No. 3, 13, 78 (Nov. 1944). Canvas impregnated with a Vinylite type resin is used for portable hangars for navy planes. The treated cloth is fireproof, mildewproof and rotproof. It is made by calendering a film 4 mils thick on single texture duck, then laminating 2 sheets together with a wet solution. The resulting fabric remains flexible even at arctic temperatures. In use the fabric is supported by a steel arch.

PRESERVING VEHICLE PARTS. E. E. Heussner and C. O. Durbin, Chrysler Corp. *SAE J. 52,* 564-72 (Dec. 1944). Among wrappers used to protect engines and other parts of military motor vehicles during storage and shipment are several laminates, usually with an asphaltic or microcrystalline wax adhesive. The original Grade C wrapper was muslin laminated to cellulose acetate, but acetate, metal foil and Cellophane laminates on paper have also been used. Shredded cellulose padding is used to some extent.

RECORDS. Jas. W. Nell (to Thos. A. Edison, Inc.). USP 2 364 545, Dec. 5. Dictating machine records are made of filled metal soap and a napped reinforcing fabric sized with metal soap containing less of the filler.

VI. FINISHING

FINISHING WOOLENS. C. S. Whewell, Leeds Univ. *Textile Recorder 61,* No. 739, 60-3, 65, 67, 100; No. 740, 52-4 (Oct., Nov. 1944). Illustrated description of methods and equipment for scouring, hydroextraction, hydroexhaustion, milling and finishing woolen and worsted goods.

MILITARY COTTON GOODS. L. M. Richardson, *Textile Bull. 67,* No. 7, 28, 46; No. 8, 24, 26, 53 (Dec. 1 and 15, 1944). In processing wartime cotton goods to meet military requirements the correct choice of a desizing agent for use in continuous singeing and desizing is important. Two different methods for the jig boil-off are presented, and wet or dry finishing methods are compared as alternative choices.

VI, 1. Preparation

WOOL BLENDS. G. Marshall. *Textile Mfr. 70,* 393, 393a-4 (Sept. 1944). Oils for lubricating wool blends must be nondrying oils with a high flash-point and if not saponifiable must be readily emulsifiable and free from corrosive acids and bad odor. Emulsion oils have several advantages, but the spontaneous heating hazard is greater than with "dry" oils.

VI, 1a. Boiling and scouring

SCOURING COTTON. G. P. Vincent, A. L. Dubeau, John F. Synan, R. L. Carr, E. G. Fenrich

and H. R. Dinges, Mathieson Alkali Works. *Am. Dyestuff Reporter 33,* P536-8 (Dec. 4, 1944). It has been found possible to make the scouring stage a continuous part of cotton processing by alkaline steaming in such a way as to eliminate kier or jig scouring. Alkaline steaming is the critical step in continuous processing and its efficiency determines whether the goods may then be dyed without further processing or bleached by the most economical method. The steamer developed for this process improved flexibility and control in the scouring process and may also be used in any hot bleaching process.

TREATING WORSTEDS. D. R. H. Williams, *Textile Mfr. 70,* 450 (Oct. 1944). An improved roll machine has been designed for crushing worsteds or woollen fabrics in scouring, to impart the best possible handle to the finished fabric. It is useful for specialty worsteds and also for barathea cloth, much used by the army and the air force.

VI, 1c. Washing

TREATING FABRICS. Harold Schiller (to Socony-Vacuum Oil Co.). USP 2 364 391, Dec. 5. Metal soaps for treating textiles are held in solution with the aid of NH_3 and an alkanolamine.

VI, 1d. Drying and conditioning

CLOTH DRYING. K. S. Laurie, John Dalglish & Sons, *Textile Mfr. 70,* 498-9 (Nov. 1944). The advantages of automatic speed control on cloth drying machines include improved conditions for the operator which increase output and improve quality. The Dalglish control device which is described and illustrated is covered by Brit. P. 563 480 of which an abstract is included (p. 499).

FAN FOR DRIER. W. Schweiter (to Maschinenfabrik Schweiter A.-G.). Brit. P. 559 661. A travelling fan to be mounted on textile machines for preventing deposition of dust or for drying lengths of fabric is driven by an electric motor and is mounted on a carriage having 2 arms, each fitted with a guide wheel.

VI, 6. Sizing and finishing

ALLYL STARCH. Anon. *Textile Age 8,* No. 11, 130-2 (Nov. 1944). A new finish brought out by the Research Administration (USDA) is made by treating starch with allyl chloride or bromide. It is soluble in organic solvents and can be cured by heat.

FINISHING WORSTEDS. Anon. *Dyer & Textile Printer 92,* 373-4 (Nov. 10, 1944). Problems encountered in finishing light weight, fine worsted fabrics are discussed and the importance of gentle treatment is emphasized. Cleansing is easier with light weight than with heavy worsted.

STARCH SIZE. Herman H. Schopmeyer and Herbert A. Kaufmann (to Am. Maize Products Co.). USP 2 364 590 Dec. 5. Preparing a starch size by controlled enzyme thinning of corn starch.

TREATING CLOTH. Sumner H. Williams. USP 2 364 838, Dec. 12. A continuous strip of cloth is chemically treated in a tank having a series of vertical wells in which the cloth is festooned from a roll above the well.

NONSLIP FINISH. Society of Chemical Industry in Basle. Brit. P. 560 020. A textile finish which also serves to increase the slip resistance of viscose rayon fabrics is made from mixed aromatic-terpene ethers by introducing a CH_2X group (X is halogen). This is effected by reaction with formaldehyde and a halogen acid, or with a dihalogendimethyl ether.

RESIST PATTERNING. Brit. Celanese Ltd. Brit. P. 560 116. Resist patterns on acetate rayon fabrics are formed by spinning with a resist of plastic and polyvinyl alcohol in water, drying and treating with a solution of 30 parts di-(methoxyethyl) phthalate in 70 parts ethyl alcohol at 20-25°C for about 5 seconds. Squeezing and drying at 90°C brings out the pattern.

TEXTILE FINISHES. J. R. Geigy. Brit. P. 560 628. Soluble salts, useful as dispersing, wetting and levelling agents are made by sulfonating a water-soluble sulfonamide in the aromatic or hydroaromatic nucleus, N-substituted with at least 1 aliphatic, hydroaromatic or alicyclic hydrocarbon radical with 8-18 C atoms.

VII. COLOR

VII, 2. Dyeing

COIR DYEING. K. Kylas, Univ. Travancore. *Indian Textile J. 54,* 459 (Sept. 1944). Coir (coconut fiber) can be dyed without being bleached, unless delicate shades are wanted. Basic dyes give bright shades with high yield, but they are fugitive to light. Since coir mats encounter soilage and wear conditions even more severe than their exposure to light, medium to dark basic dyes often serve as well as more lightfast direct or acid dyes.

COTTAGE STEAMER. Anon. *Dyer & Textile Printer 92,* 336, 381 (Oct. 27, Nov. 10, 1944). In using the cottage steamer the pressure must be adapted to the type of goods being dyed. Wool and its blends with cotton are often processed without any applied pressure after printing with acid or substantive dyes. Jute goods should be steamed without pressure. Some fabrics call for steam pressures of 5 or 10 psi and others as high as 40 psi.

DYEING ACETATE RAYON. Anon. *Silk & Rayon 18,* 1120-2 (Oct. 1944). A new technique is described for dyeing acetate rayon or its blends with wool, using wool dyes. A particular advantage is time saving, both in dyeing and in rapid drying.

DYEING ACETATE SILK. George Broun. *Southern Knitter 8,* No. 12, 18, 52 (Dec. 1944).

Practically all of the direct dyeing acetate colors have good fastness to peroxide bleach but they are not easily removed from cotton and viscose silk if they are allowed to stain these fabrics. Other methods than the peroxide bleach can, however, be used for removing such stains. Developed acetate dyes can be used successfully in skein dyeing. With proper attention to dye bath and conditions good uniformity can be achieved in dyeing acetate silk hosiery.

DYEING RAGS. Kemmek. *Fibres, Fabrics & Cordage 11,* 398-9 (Oct. 1944). Current practice in cleaning and dyeing rags for reuse as textiles is briefly described. Attention is given to wool, cotton and mixed fabrics.

DYEING RAYON. Anon. *Dyer & Textile Printer 92,* 395-7 (Nov. 10, 1944). The effect of fiber dimensions on rayon dyeing is discussed, with emphasis on the fact that thicker filaments take on a deeper shade. The nature of the fiber surface is a factor in this respect.

DYEING VISCOSE RAYON. C. C. Wilcock. *Textile Recorder 61,* No. 739, 74-9 (Oct. 1944). Viscose rayon is being successfully dyed in cake form but the method still needs to be adapted to vat dyeing and improved equipment designs are needed to permit filtration as part of the system. Slow drying is another problem which needs attention.

DYEING WOOL. C. L. Bird, Leeds University, *Textile Recorder 61,* No. 739, 68-71, 73 (Oct. 1944). In the best modern practice loose wool is dyed between 2 perforated, circular stainless steel plates through which the dye liquor is circulated in alternate directions by a propeller. The methods and apparatus are described and illustrated.

FINISHING AND DYEING. Anon. *Am. Wool & Cotton Reporter 58,* No. 47, 13-4 (Nov. 23, 1944). Directions are given for oiling, stripping cards, burling, napping, scouring, rinsing and union dyeing of cotton warp melton which is a low grade fiber for inexpensive coats and ski suits.

GLYCERIN. W. J. Pickett. *Textile Age 8,* No. 11, 80, 82, 84 (Nov. 1944). Glycerin is useful in textile processing as a hygroscopic agent in steam or acid aging of printing colors, as a lubricant in printing paste, as a leveling agent for dyes, as a plasticizer and as a delustering agent.

MORDANTING. C. H. Giles, Imperial Chemical Industries. *J. Soc. Dyers & Colourists 60,* 303-15 (Nov. 1944). The mechanism of mordanting animal fibers with chrome and other metal compounds under various conditions is discussed in the light of literature of the last 70 years; bibliography (164 references).

SULFUR DYEING. M. T. Barnhill. *Am. Dyestuff Reporter 33,* P521-3 (Dec. 4, 1944). Tendering of cotton in dyeing with sulfur dyes may be caused by faulty operating conditions; sodium perborate appears to be a safe oxidizing agent whereas dichromate acidified with acetic acid is dangerous

unless the goods are washed thoroughly and given an alkaline finish. Iron as an impurity in sulfur black or in commercial sodium sulfide is likely to cause tendering and sodium sulfide is corrosive to some metals used in dye baths. Contact of such metals as steel, cast iron, lead or brass with the dye baths apparently has little or no tendering effect.

FLUORESCENT DYEING. H. Meyer. Brit. P. 560 143. Imparting a blue fluorescence to dyed fabrics by treatment before, during or after dyeing with a solution of a hydroxycoumarin or other fluorescent compounds.

APPLICATION OF DISPERSOL VL IN DYEING. Technical Circular, Imperial Chemical Industries, Ltd. London 1944; 11 pp.

Reviewed in *Textile Recorder 61,* No. 739, 100 (Oct. 1944).

RATE OF DYEING. Part 1. Introductory. T. Vickerstaff, Dyestuff Division, Imperial Chemical Industries, Ltd. London, 1944; 20 pp.

Reviewed in *Textile Recorder 61,* No. 739, 100 (Oct. 1944).

TECHNIQUE OF DYEING RAYON. H. A. Thomas, Textile Manufacturer Monographs No. 3. Emmott & Co., Ltd., Manchester 1944; pp. 67; price 2/6.

Reviewed in *Silk & Rayon 18,* 1124 (Oct. 1944).

VII, 2a. Direct

DIRECT DYEING. George Broun, *Textile Bulletin, 67,* No. 8, 41-2 (Dec. 15, 1944). The chief use of direct dyes on printed goods is for direct or discharge printing, the latter being effective particularly with acid treated or developed dyes which are dischargeable to a clear white. Occasional shipments of an ordinarily effective direct dyeing discharge color do not discharge satisfactorily and require an addition of titanic oxide to cover up the residual stain. Usually a dye which behaves in this way will also stain acetate rayon.

JIGGER DYEING. Anon. *Rayon Textile Monthly 25,* 517-8 (Oct. 1944). Although the jigger is a simple and comparatively inexpensive machine which does not require much floor space nor consume much power it is not a continuous machine and there is need for improvement. Pad dyeing is superior for some applications but it is improbable that the jigger will be displaced in dye houses for many years to come.

VII, 2b. Developed dyeing

DEVELOPED DYES. Noel D. White, *Rayon Textile Monthly 25,* 513-4 (Oct. 1944). Numerous substantive dyes can be developed on the fiber and are applicable to cotton, mercerized cotton, any vegetable fiber having affinity for direct dyes, and the viscose and cuprammonium rayons. Among the substitute dyes which can be developed is primuline. Directions are given for its use with various developers to produce a variety of colors.

DYEING TEXTILES. Chiles E. Sparks and Joseph F. Laucius (to E. I. du Pont de Nemours & Co.). USP 2 363 904, Nov. 28. In developing polyazo dyes of the phthalocyanin series on the fabric the result is improved by pretreating the fabric with a simple or heteropoly acid or salt derived from Mo, W or V to increase the affinity of the fiber for the developed dye.

AZO DYEING. James W. Libby, Jr. and Harold E. Woodward (to E. I. du Pont de Nemours & Co.). USP 2 363 905, Nov. 28. Polyazo dyes of the phthalocyanin series are developed on the fiber, which is then treated with a water-soluble compound of Cu, Ni, Co or Cr to metallize the dye on the fiber.

AZO DYEING. Swanie S. Rossander and James W. Libby, Jr. and Harold E. Woodward (to E. I. du Pont de Nemours & Co.). USP 2 363 906, Nov. 28 Textile fibers are impregnated with a polyazo compound of the phthalocyanin series and the dye is then developed on the fiber by coupling with a salicylic acid or hydroxynaphthoic acid derivative.

VII, 2c. Vat

VAT DYEING. Anon. *Can. Textile J. 61,* No. 22, 36-46 (Nov. 3, 1944). Two recent du Pont developments in vat dyeing are described. They are the pad-steam process and the multi-lap process, both of which show promise that they will broaden the range of vat dyeing applicability and improve methods of application.

VAT DYEING. Raymond W. Jacoby, *Am. Dyestuff Reporter 33,* P502-9 (Dec. 4, 1944). From a study of color yield in vat dyeing, and especially of the dispersing, penetrating and protective colloid action of the thickener as influencing the amount of printing paste delivered to the fabric, it is concluded that the ideal vat printing paste should prevent reagglomeration of dye particles and have no protective colloid action which would retard dye fixation on the fiber. Cohesion and adhesion must be properly balanced to permit delivery to the fabric with minimum penetration.

VII, 2d. Printing

DISCHARGE PRINTING. Technicus. *Textile Weekly 34,* 702-4, 706, 708 (Oct. 27, 1944). Technical directions are given for preparation of paste and thickeners and for screen printing and other methods of white discharge printing on textiles.

PRINTING PILE FABRICS. Anon. *Dyer & Textile Printer 92,* 415-6 (Nov. 24, 1944). A stencil process using direct or basic dyes is favored for printing ocelot, lizard and leopard effects on pile fabrics. Only 2 strengths of the same foundation color are used, the weaker strength being applied to marginal perforations in the stencil plate.

PRINTING TEXTILES. Norman S. Cassel (to Interchemical Corp.). USP 2 364 692, Dec. 12. The disperse phase of an emulsion printing paste is a pigmented thermosetting resin lacquer in an organic solvent.

PRINTING PASTE. Hercules Powder Co. Brit. P. 560 049. A printing paste with a solid content not over 20% by weight has as vehicle an emulsion in which the continuous phase is a solution of a water-insoluble cellulose ether in a water-immiscible organic solvent.

SOME OBSERVATIONS ON THE PRINTING OF ACID DYESTUFFS ON VISCOSE AND CUPRAMMONIUM RAYONS. Technological Monograph 2, Dyestuffs Division, Imperial Chemical Industries, Ltd.

Reviewed in *Textile Mfr. 70,* 495-6 (Nov. 1944).

VII, 3. Defects and dye failure; causes and prevention

FAST DYEINGS. Albert Landolt and Andreas Ruperti (to Society of Chemical Industry in Basel, 2 364 725, and Ciba Products Corp. 2 364 726). USP 2 364 725-6, Dec. 12. Wet fastness of dyeings and prints is increased, without impairing fastness to light, by treating with a Cu compound during the aftertreatment of water-soluble dyes with a cation-active N base or with a compound containing a C atom attached by a double bound to 1 N atom and by single bonds to 2 others.

VII, 4. Pigment coloring

PIGMENT PRINTING. J. Wakelin. *Can. Textile J. 61,* No. 22, 33-4; No. 24, 40, 48 (Nov. 3, Dec. 1, 1944). Pigments aided by synthetic resins have two major opportunities for competing with dyes in textile colouration. One is in colouring rayon filaments by incorporating the treatment in the spinning composition; the other is in printing with pigment dispersions using colourless synthetic resins to produce clear, sharp, printed patterns. Emulsions used as pigment vehicles may be of the water-in-oil or oil-in-water type. Pigments may be organic, e. g. insoluble azo dyes, or they may be white or colored metal oxides or other inorganic pigments.

DECORATING TEXTILES. Carl M. Marberg and Earl K. Fischer (to Interchemical Corp.). USP 2 364 738, Dec. 12. Improving the color value of pigment printing pastes in aqueous polyvinyl alcohol by adding 0.1 to 1% of a water-soluble alginate.

VIII. PROOFING

SNAGPROOF NYLON. E. I. du Pont de Nemours & Co. Brit. P. 560 084. Sheer knit nylon goods which do not run when snagged are produced by knitting yarns which have been treated with an emulsion of an alkyd or vinyl resin or a natural resin or carbohydrate.

CHLORINATING WOOL UNIONS. Society of Chemical Industry in Basle. Brit. P. 560 284. Dyed wool: cotton unions are chlorinated to prevent the wool from felting, and chlorine-sensitive dyes on

the fabric are protected by a water-insoluble urea-formaldehyde condensation product.

VIII, 1. Waterproofing; weatherproofing; moistureproofing

MOISTUREPROOF FOIL. British Cellophane, Ltd. Brit. P. 559 520. Cellophane is moistureproofed with a composition of shellac, gum dammar, maleic acid, paraffin wax and a butylurea-formaldehyde condensation product in a blend of organic solvents.

WATER-REPELLENT FINISH. G. M. Clark. Brit. P. 560 448. A compound for rendering fabrics water-repellent is an ester of a fatty acid (at least 10 C) and a quaternary ammonium salt having 1 alkyl group, e. g. stearoxyethylpyridinium chloride.

WATER-REPELLENT FABRIC. Am. Cyanamid Co. Brit. P. 560 532. A permanent water-repellent finish is imparted to fabrics by treatment with an aqueous dispersion of an alcohol-reactive melamine-aldehyde condensation product in a solvent which also contains a salt of an alkoxypropylamine having at least 11 C atoms.

VIII, 5. Creaseproofing

CREASE RESISTANCE. Donald H. Powers, Monsanto Chemical Co. *Rayon Textile Monthly 25,* 502 (Oct. 1944). In connection with the use of resins for creaseproofing filaments or spun rayon a melamine resin has been developed which increases the resistance of rayon to the damaging effect of chlorine bleaches sometimes used in laundries. Other resins which have been offered for rayons have impaired rather than improved the resistance of the fabric to chlorine and some of the resins have not even been washable. Some of the best resins for rayon treatment also improve the laundryfastness of dyes on rayon.

CREASEPROOFING. H. Dreyfus. Brit. P. 559 584. Cotton, linen or acetate silk may be creaseproofed and waterproofed by treatment with a solution of a long chain alkyl carbylamine at 20°C. followed by pressing and baking at 110°C. In an example a 20% solution of stearylcarbylamine in benzene is employed.

VIII, 6. Shrinkproofing

SHRINKAGE OF WOOL UNIONS. C. S. Whewell and B. Cankat, Leeds Univ. *J. Soc. Dyers & Colourists 60,* 302-3 (Nov. 1944). Mild chlorination was not sufficient to shrinkproof wool unions containing a high percentage of wool but was more effective than on 100% wool. Wool unions can be made unshrinkable by a more severe wet chlorination treatment.

PRESHRUNK RAYON. Arthur Lyem (to Camille Dreyfus). Can. P. 424 287, Dec. 5. Continuous preshrinking of acetate rayon by passage through a bath of acetaldehyde.

IX. TESTING AND ANALYSIS; SPECIFICATIONS

IX, 1. Physical and mechanical

INTERPRETATION OF TESTS. A. G. Ashcroft, Alexander Smith & Sons Carpet Co. *Am. Dyestuff Reporter 33,* P486-90; discussion P490-1 (Nov. 20, 1944). Interpretation of textile test data is a complicated problem and depends in part on proper presentation of test results. Known limitations of precision and reliability should be stated and the method of sampling should be reported. Service life should not be predicted from laboratory tests unless they are correlated with service tests.

SPECIFICATIONS. Frank Steadman, Phila. Quartermaster Depot. *Am. Dyestuff Reporter 33,* P491-5; discussion; P495-6 (Nov. 20, 1944). Textile specifications must be clear, concise and logical. The design section must describe the product in such quality that it can be manufactured in the requisite quantity. The acceptance specification must describe the tests by which conformity to the design specification is confirmed, and it should make use of statistical analytical methods.

TEXTILE STANDARDS. W. R. McCaffrey, Can. Standard Association. *Can. Textile J. 61,* No. 23, 45 (Nov. 17, 1944). Industrial standards backed by coordination of design and simplification of production practices can do much to eliminate economic waste. Methods of sampling and testing must lead the way in a standardization program.

TEXTILE STANDARDS. H. K. Torpey, *Can. Textile J. 61,* No. 23, 21 (Nov. 17, 1944). Standardization of sizes, shapes and styles in the textile industry is severely limited by market factors but quality standards can and should be established. An important feature of quality standardization is precise definition of terms and units. Adoption of a set of Canadian standards is recommended.

IX, 1a. Fibers

COTTON CHARACTER. E. H. Helliwell. *Textile World 94,* No. 12, 82-3, 129 (Dec. 1944). Although variations in properties have an important effect on yarn quality there are no official standards for cotton character. Factors to be considered in routine hand and eye tests are discussed. For many purposes such testing serves acceptably instead of a complete instrument analysis of cotton character.

TESTING LABORATORY. T. S. Harris, Mt. Vernon-Woodberry Mills. *Cotton 108,* No. 11, 93-6; No. 12, 100-2 (Nov., Dec., 1944). It has been demonstrated by laboratory tests accompanied by mill trials that different staple lengths can be successfully blended providing the average staple length is kept sufficiently high, with due consideration for fineness and character as well as staple length. When marketing conditions permit cotton to be bought on variety, due consideration must be given to this factor also. Among the instruments used in these

tests were the microscope, the Pressley fiber strength tester, the Suter-Webb fiber sorter and the Hertel Fibrograph.

IX, 1b. Yarns

TESTING. James M. Scott, Henry L. Scott & Co. *Can Textile J. 61,* No. 23, 47-8 (Nov. 17, 1944). Constant load testing is a modern development in measuring tensile properties of fibers and yarns. It permits hysteresis and fatigue tests by loading and unloading the sample at constant rates. Developments in new and better synthetic fibers call for new tests under extreme conditions.

TESTING RUBBER THREAD. Warren A. Johns. *Textile World 94,* No. 11, 139, 141, 200, 202 (Nov. 1944). Natural rubber thread is more sensitive to tensile stress than neoprene thread. The latter can be woven successfully if its characteristics are determined in advance. The tension on warps should be released over weekend periods. Apparatus for quick testing of neoprene thread is described and illustrated.

IX, 1c. Fabrics; foils; films

MOISTURE PERMEABILITY. G. Deeg, Jr. and C. J. Frosch, Bell Tel. Laboratories. *Modern Plastics 22,* No. 3, 51-2, 72-4 (Nov. 1944). A constant pressure diffusion cell was used to measure the rate of diffusion of water vapor through films or foils of a variety of vinyl and other synthetic resins, cellulose esters and ethers, regenerated cellulose and rubber. Results are presented in numerical tables.

RAYON: DIMENSIONAL CHANGES. Olen F. Marks. *Am. Dyestuff Reporter 33,* P509-13 (Dec. 4, 1944). A study of 5 existing test methods for shrinkage and stretching of rayon crepes and other fabrics has resulted in substantial improvements by ruling out variations occurring from one locality to another. An experimental machine used in these tests is described and illustrated.

SERVICE TESTING. Jules Labarthe, Jr., Mellon Institute. *Am. Dyestuff Reporter 33,* P482-4; discussion P484-6 (Nov. 20, 1944). Improvements in testing of textiles, under pressure of military demand, will presumably carry over to postwar testing methods. A marked increase in the use of special finishes is anticipated and control of textile finishes to avoid hazards will therefore be increasingly necessary.

STRENGTH OF RAYON. Dorothy S. Lyle and Dorothy C. Black, Penn. State College. *Am. Dyestuff Reporter 33,* 441-4, 455-7 (Oct. 23, 1944). Tests with 5 rayon fabrics (4 woven and 1 knit) indicate as a general rule with some exceptions that wringing rayon garments by hand is nearly as harmless as gentle squeezing after washing. Both wet and dry strengths are considered in the numerous tests of hand wringing effects on tensile strength of rayon fibers. The tests were carried through 50

hand launderings and are reported in a series of tables and charts.

TESTING DUCKS. W. Lord. *Textile Mfr. 70,* 395-6, 398 (Sept. 1944). For measuring tensile strength in the warp direction of belting cotton, where high uniform strength is desired in a close firm fabric, neither the ravelled-strip test nor the grab test is entirely satisfactory. A modified test which is a combination of these two is described and illustrated. The improved test may be applied also to other types of fabrics.

YARN SHIFT TESTER. C. B. Baker. U. S. Testing Co., Inc. *Rayon Textile Monthly 25,* 503-4 (Oct. 1944). An instrument for testing the tendency of ends to shift in the body of garment fabrics has been developed and is useful in testing the ability of sizes and resin finishes to hold the yarn components of a fabric against shifting after repeated laundering. The instrument has been standardized for testing nylon insect netting and will be standardized for other fabrics also.

IX, 1d. Textile Chemicals and dyes

DYED RAYON. Marcel Pagerie. *Rayon Textile Monthly 25,* 514 (Oct. 1944). Specifications are needed for dyes to be used on rayon and tests are reported which would be useful in setting acceptable specifications.

STARCH FLUIDITY. V. B. Holland. *Am. Dyestuff Reporter 33,* P513-8 (Dec. 4, 1944). Current methods for testing starch fluidity in textile sizes are lacking in significance and do not meet the needs of textile mills. Sources of variability in existing tests are discussed and it is recommended that one of the existing methods should be selected as a standard and improved to meet the needs of current testing problems.

IX, 3. Biological

CLOTHING AND CLIMATE. Harold E. Reed, Textile World. *Textile World 94,* No. 11, 113, 115, 117 (Nov. 1944). The Quartermaster Corps has adopted a unit known as the "clo" based on the rate of heat loss from the body through the clothing and on the heat insulating capacity of the clothing. Wool fabrics hold more dead air and therefore have better insulating value than smooth tightly woven cotton fabric but the latter are better windbreaks and should be worn as the outer garment. The theoretical and practical application of this unit is useful in designing garments for maximum warmth with minimum bulk.

TESTING ANTISEPTIC FABRICS. Louis C. Barail, U. S. Testing Co. *Am. Dyestuff Reporter 33,* P529-36 (Dec. 4, 1944). An improved selection and sequence of tests for antiseptic fabrics was used in estimating the bacteriostatic, bactericidal, fungistatic and fungicidal activity of 4 proprietary compounds on fabrics after 5, 10, 15, 20, 25 and 30 washings. One compound proved to be so much

more potent than the other 3 that the result richly repaid the cost of the test program.

TESTING ROT RESISTANCE. D. M. Batson, Dorothea J. Teunisson and N. Porges, USDA, Southern Regional Research Laboratory. *Am Dye-Stuff Reporter 33,* 423-7, 449-54 (Oct. 9 and 23, 1944). A soil burial method has been developed for determining the rot resistance of fabrics. Specimens are removed at 24 or 48 hour intervals for testing. Soil beds are prepared in such a way as to maintain and force the growth of a variety of organisms known to attack textile fabrics. A proposed standard of rot resistance is based on 85% loss of strength as the practical end point of fabric rotting.

X. WASTE RECOVERY AND UTILIZATION; WASTE PREVENTION

X, 2. Yarn and fabric wastes

WASTE RECOVERY. Frank L. Asbury, Jr., Avondale Mills. *Textile World 94,* No. 11, 123, 125 (Nov. 1944). The waste recovery program at the Avondale Mills includes both systematic collection and utilization of waste and a program of waste prevention. Waste sorted to different types is used in blends for certain specified purposes.

XI. CLEANSING

XI, 1. Laundering

WHAT'S WRONG AND WHY WITH LAUNDRY WORK. William Brown, Heywood & Co., Ltd. London, 1944; 170 pp.; price 10s. 6d.

Reviewed in *J. Soc. Dyers & Colourists 60.* 316 (Nov. 1944).

XII. HAZARDS; SAFETY PRECAUTIONS

XII, 4. Deterioration

CORROSION PROTECTION. C. Norris Rabold. *Textile World 94,* No. 12, 105, 107 (Dec. 1944). Equipment in finishing plants is subject to a variety of corrosive conditions. Protective coatings now utilize a wide variety of synthetic resins and plastics for corrosion protection and can be selected for specific requirements. Molded plastic linings for tanks and other pieces of equipment are also effective in protecting metal surfaces.

XIII. TEXTILE MILLS

TEXTILE ENGINEERING. John A. McPherson, John A. McPherson & Co. *Textile Bulletin 67,* No. 6, 20, 64, (Nov. 15, 1944). Textile engineers are searching for thorough and drastic modernization of mills after the war. Manufacturing costs must be greatly reduced to meet high unit labor costs. Operating efficiency of present mills can be increased but plants which were modern by standards of 10 years ago are now verging on obsolescence.

XIII, 1. Buildings

GLASS MILL WALLS. Sumner Rider. *Cotton 108,* No. 12, 93-4 (Dec. 1944). Glass block walls for textile mills reduce air conditioning and heating costs by decreasing heat exchange in the summer and loss in the winter. A no-glare type of block is used below eye level, and a light directing type above eye level. Daylight lighting in the mill is substantially improved.

TEXTILE MILL DESIGN. A. Laszlo. *Textile Mfr. 70,* 384-6, 391 (Sept. 1944). Principles to be followed in textile mill design and layout are discussed on the basis of experience in America, Russia and Great Britain. Flow of production must be continuous but not necessarily straight-line. Repeated crossings are permissible if they are kept on different levels. The best type of building from the standpoint of materials, transport and other efficiency factors is a set of parallel bays with columns as wide apart as possible.

XIII, 2. Machinery

MACHINERY MAINTENANCE. Cecil C. Elliott, *Textile Bulletin 67,* No. 7, 18, 20, 22, 25; discussion 25-7, 38 (Dec. 1, 1944). Problems of machinery maintenance in textile mills are discussed from the master mechanic's and superintendent's standpoints.

NEW EQUIPMENT. Anon. *Rayon Textile Monthly 25,* 526-8 (Oct. 1944). Illustrated descriptions of the Reiner-warp tension and stop motion; a power grease gun; nylon bristles in shuttle friction; a fountain brush for spot removing; the U. S. Testing Co. fabric shift tester; the Aero-titrater for rapid water analysis; a compressed air device for cleaning lint from ceilings, walls, piping and other surfaces; a high frequency electronic drier for fabrics; and the 3-vane electronic controller for temperature or pressure.

NEW EQUIPMENT. Anon. *Textile World 94,* No. 11, 147-8, 150; No. 12, 135-6, 138 (Nov., Dec. 1944). Illustrated descriptions of a multi-lap continuous process dye bath; a high frequency generator for induction or dielectric heating operations; the B. F. Goodrich porosity meter; a control instrument for air compressors; a photoelectrically controlled heating, cutting and packing machine; a mercury pot stop motion device for warper-creels; the Reiner yarn tensioning device; the Aero-Titrater for water analysis; a Bureau of Standards tester for foot shrinkage in hosiery; and a shuttle for the CK supersilk loom.

TEXTILE MACHINERY. Elliot B. Grover, School of Textiles, N. C. State College. *Textile Bulletin 67,* No. 5, 16, 18, 46-7 (Nov. 1, 1944). New features which may be expected in postwar textile machinery are discussed in the light of needed improvements. Higher output per worker is a basic necessity. Modernization of mills should be a progressive change rather than a sudden drastic mechanical revolution.

TEXTILE MACHINERY. Nathaniel M. Mitchell, Barnes Textile Associates, Inc. *Textile Bulletin 67,* No. 6, 17-18 (Nov. 15, 1944). Introduction of postwar machine designs based on wartime advances in textile machinery will require a great deal of time and planning. Among prospective improvements are single process picking for cotton, rayon and synthetic fiber blends; new opening, dusting and blooming machines for these blends; improved drawing frames for cottons and worsteds; high speed slashers; and new developments in bleaching and wet finishing equipment. Numerous other improvements are also anticipated but not for immediate postwar application.

TEXTILE MACHINERY. Frank Nasmith. *Textile Recorder 61,* No. 739, 80-1 (Oct. 1944). The future of textile machinery is considered in the light of the past and present. The Reece roll for winding and traversing yarns is regarded as one of the most revolutionary inventions of the past decade. Postwar introduction of improved machinery will presumably also call for a better trained class of mechanics and foremen.

TEXTILE MACHINERY. Albert Palmer, Crompton & Knowles Loom Works. *Textile World 94,* No. 12, 84-5 (Dec.); *Textile Bull. 67,* No. 8, 18, 21-2, 47-9 (Dec. 1, 1944). Wartime developments offer numerous possibilities for improvement in peacetime textile machinery. Magnesium is more adaptable to replacing cast iron than steel but is much more expensive than either. It will doubtless be useful in certain machine parts. Plastics for textile machine parts also have severe limitations of cost and performance characteristics. The pick motion, which has been the subject of about 1400 U. S. Patents since 1850, has also been electrified under wartime conditions but at a very high cost. Electronic control devices have many possibilities but inductance causes present electrical circuits to be too slow for some operations now performed mechanically. For these and similar reasons it is not to be expected that wartime advances will quickly revolutionize textile machinery when peace returns.

XIII, 5. Lighting

COLOR IN MILLS. S. W. Quisenberry, E. I. du Pont de Nemours & Co. *Cotton 108,* No. 11, 97-9 (Nov. 1944). Color conditions in textile mills are improved by applying a glare reducing finish to window panes where needed; painting machinery and equipment according to a color code to relieve monotony, improve visibility and minimize accident hazards; and painting both interior and exterior according to an approved color scheme.

COLOR IN MILLS. Harold E. Reed, Textile World. *Textile World 94,* No. 11, 96-101 (Nov. 1944). A specification book has been used to good advantage in planning the color scheme and issuing painting directions to every department of a textile mill. A safety color code is employed as an aid in accident prevention. Numerous applications in the Marshall Field mills are illustrated.

MILL LIGHTING. Anon. *Textile Mfr. 70,* 439-40 (Oct. 1944). Illustrated descriptions of an exhibition of mill lighting and color, set up in Manchester by the Cotton Board Recruitment and Training Department. Color is used on walls, ceilings and floors to give color harmony and enhance the lighting effect.

MILL LIGHTING. Anon. *Textile World 94,* No. 12, 96-7 (Dec. 1944). Illustrated description of fluorescent lighting installation at the Sweetwater Hosiery Mill.

MILL LIGHTING. J. W. Howell, Electric Light Mfrs. Assoc'n. *Textile Weekly 34,* 648, 650, 652, 654, 698, 701, 741-2, 744 (Oct. 20 & 27, Nov. 3, 1944). The principles governing effective mill lighting are discussed and equipment for incandescent and fluorescent lighting is described and illustrated. Some mills provide only 3-5 foot-candles of light intensity on machines, as against 5000 often reached by bright sunlight, or 1000 even on cloudy days.

MILL LIGHTING. T. S. Jones, Crompton Parkinson Ltd., *Textile Mfr. 70,* 441 (Oct. 1944). Improvements in mill lighting, both for the psychological effect on workers through suitable color changes and for increased efficiency of output and quality of product, have produced excellent results in a number of mills. On the whole, however, the textile industry lags behind other manufacturing industries in factory lighting.

MILL LIGHTING. Earle Mauldin, Textile World. *Textile World 94,* No. 11, 95 (Nov. 1944). Good lighting practice in mills tends to lower the fixture mounting height in the spinning room as low as 90" with continuous lines of fluorescent lamps along the full length of the spinning frame. Similarly in weave rooms and over slashers the tendency is to adapt the direction and intensity of the light to the work being performed.

XIII, 6. Atmospheric control

AIR TEMPERATURE CONTROL. Sarco Thermostats, Ltd. *Textile Mfr. 70,* 505 (Nov. 1944). Automatic temperature regulators for space heating in textile mills and for control of driers are described and illustrated.

XIII, 7. Process control; control instruments

CONTROL INSTRUMENTS. Henry Miedendorp, Jr. *Rayon Textile Monthly 25,* 519-20 (Oct. 1944). While the textile industry will not have the postwar reconversion problem faced by other industries it will have a modernization problem calling for improved instrumentation in the control of textile processing operations and in maintaining optimum speed of textile machinery. Some instruments for these purposes are described and illustrated.

ELECTRON TUBES. W. C. White, General Electric Co., *Rayon Textile Monthly 25,* 509-10 (Oct. 1944). Electron tubes are classified according to the nature and number of electrodes and added special features such as fluorescent coatings in cathoderay tubes and the magnetic field in magnetrons. Electron tubes are useful for industrial control of many kinds in response to energy impulses derived from light, sound or electricity.

XIII, 8. Water supply

WATER FOR COOLING. Lewis B. Miller, W. H. & L. D. Betz & Co. *Cotton 108,* No. 11, 108-10 (Nov. 1944). Textile mills tend to concentrate in areas where abundant supplies of soft water are available. While soft water is desirable for boiler feed waters and process waters it tends to be more corrosive than hard water and often needs treatment when used for cooling purposes. Algae, slimes and other organic growths are also troublesome in cooling water and must be controlled. Treatments of cooling water to prevent corrosion and scum or slime are discussed.

XIV. TEXTILE RESEARCH

RESEARCH. F. S. Blanchard. Textile Research Industry. *Can. Textile J. 61,* No. 23, 46-7 (Nov. 17, 1944). The five point program of the Textile Research Institute is outlined.

TEXTILE RESEARCH. Fistex. *Textile Recorder 61,* No. 739, 82-3, 85, 87-8 (Oct. 1944). A lecture on the research needs of the textile industry.